

Message Text

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TAGS: IAEA, SENV

SUBJECT: IAEA PANEL REPORT GOV/1622 OCEAN DUMPING

REF: (A) IAEA VIENNA 8810; (B) STATE 206716

SUMMARY. VOLLING ARE CLARIFICATIONS REQUESTED REF B IN CONNECTION AGENCY'S DRAFT RECOMMENDATIONS RELATING TO ITS RESPONSIBILITIES UNDER OCEAN DUMPING CONVENTION. END SUMMARY.

1. AGENCY OBTAINED COMMENTS FROM DUNSTER, PRESTON AND AUTHORS FO NRPB-R.14 REPORT IN U.K., WHICH CLARIFY U.S. POINTS RAISED REF B. SUBSTANCE OF THEIR COMMENTS, WHICH WHICH AGENCY AGREES EXCEPT WHERE NOTED, IS AS FOLLOWS.

2. RE PARA 2 REF B, NRPB-R.14 REPORT CLEARLY STATES ON PAGE 19 THAT 10 TO THE 12TH POWER CI/Y APPLIES TO AGED MIXED FISSION PRODUCTS CONTAINING NO MORE THAN ABOUT 15 PERCENT OF STRONTIUM-90 PLUS CAESIUM-137 AT TIME OF DISPOSAL. LIMIT OF 10 TO THE 11TH POWER CI/Y IS VALID ONLY IF ALL WASTES CONSISTED OF CAESIUM-137, WHICH IS MOST RESTRICTIVE BETA EMITTING NUCLIDE. AGED MIXED FISSION PRODUCTS ARE A MUCH MORE REALISTIC APPROXIMATION TO HAZARD POTENTIAL OF WASTES WHICH UNCLASSIFIED

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ARISE IN LARGER QUANTITIES THAN IS CAESIUM-137 ALONE. LIMIT

OF 10 TO THE 12TH POWER, THEREFORE, IS FULLY JUSTIFIED AND ALSO THE FITURES DERIVED FROM THIS LIMIT. COMMENT AT END OF APRA 2A REF B RE "OR TO SOME AS YET UNSPECIFIED NUMBER BELOW 10 TO THE 2ND POWER CI/TONNE FOR BETA, RPT BETA, WASTES ALONE" IS NOT RPT NOT VALID. ALL PURE BETA EMITTERS EXCEPT STRONTIUM-90 WHICH CAN APPEAR IN SIGNIFICANT QUANTITIES IN WASTE HAVE LIMITING DISPOSAL RATES EXCEEDING 10 TO THE 12TH POWER CI/Y. STRONTIUM-90 UP TO 15 PERCENT HAS BEEN CATERED FOR IN THE PROPOSED LIMIT AND A HIGHER PROPORTION WILL NOT RPT NOT REGULARLY OCCUR IN WASTES DUMPED IN PRACTICE. THE TERM BETA EMITTERS IN GOV/1622 OBVIOUSLY INCLUDES BETA-EMITTING NUCLIDES WHICH ALSO EMIT GAMMA RAYS. IT HAS BEEN USED IN PLACE OF "MIXED FISSION PRODUCTS" IN THE DEFINITION SO AS NOT RPT NOT TO EXCLUDE NEUTRON ACTIVATION PRODUCTS FROM THE DEFINITION OF PROHIBITED WASTES. COMMENT: AGENCY BELIEVES IT MIGHT BE MORE APPROPRIATE TO USE TERM "BETA-GAMMA" VICE "BEGA" EMITTERS TO CLARIFY THIS POINT. END COMMENT.

3. COMMENT PARA 2 REF B CONCERNS PRESENTATIONAL POINT RATHER THAN THE SAFETY OF DISPOSAL ARRANGEMENTS NRPB-R.14 USES A MODEL IN WHICH DISPOSAL TAKES PLACE AT 5,000 METERS AND THE LIMITING DISPOSAL RATES CALCULATED IN THAT REPORT WOULD CLEARLY BE SMALLER IF THE MODEL ASSUMED A DEPTH OF 2,000 METERS. ATTENTION IS DRAWN, HOWEVER, TO THE VITALLY IMPORTANT FIRST FULL PARAGRAPH ON PAGE 8 OF GOV/1622 AND TO ITEM (1) IN 2.2 (THE DEFINITION). ALL DISPOSAL OPERATIONS ARE SUBJECT TO A PERMIT PROCEDURE AND CASE BY CASE ASSESSMENT. IN SUCH ASSESSMENTS, THE EXPERTS CONCERNED OBVIOUSLY WOULD ADJUST THE MODEL TO MEET PARTICULAR LOCAL CIRCUMSTANCES OF DISPOSAL, SUCH AS DEPTH. PERHAPS IT WOULD HELP IF ON THE SECOND LINE OF PAGE 8 "(BELOW 2,000 METERS)" WERE CHANGED TO "AT 5,000 METERS DEPTH". THERE IS NOT RPT NO CASE FOR CHANGING THE DEPTH OF 2,000 METERS IN 4.2(1) OF GOV/1622. THIS IS A RECOMMENDATION TAKEN FROM IAEA SAFETY SERIES NO. 5. THIS DOCUMENT HAS RECENTLY BEEN REVIEWED BY AN IAEA PANEL CHAIRED BY POLVANI (REF ATOMIC ENERGY REVIEW, VOL 9, 4, PP 853-868, 1971) AND REMAINS VALID. THERE IS THUS NO RPT NO INCONSISTENCY BETWEEN GOV/1622 AND THE NEA DOCUMENT. COMMENT: AGENCY BELIEVES IT MIGHT BE MORE CONFUSING TO CHANGE 2,000 METERS TO 5,000 METERS ON PAGE 8, AS SUGGESTED, UNCLASSIFIED

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SINCE SOME PEOPLE MIGHT INTERPRET THIS AS BEING THE IAEA'S DEFINITION OF THE DEEP SEA. AGENCY IS, HOWEVER, CONSIDERING CHANGING PHRASE TO READ "E.G., AT DEPTHS OVER 2,000 METERS." END COMMENT.

4. REPORT CONTAINING SUBSTANCE OF NRPB-R.14, INCLUDING MODEL PROPOSED BY WEBB AND MORLEY, WAS DISCUSSED AT OECD/NEA MEETING ON HAZARD ASSESSMENT FOR RADIOACTIVE WASTE DISPOSAL

INTO THE NORTHEAST ATLANTIC HELD IN MAY 1973. NEA HAZARD ASSESSMENT WAS BASED ON THIS REPORT, AND IT WAS RECOMMENDED AT THAT MEETING THAT THE REPORT SHOULD BE PUBLISHED BY NATIONAL RADIOLOGICAL PRODUCTION BOARD (NRPB) IN THE U. K. PUBLICATION NO. NRPB-R.14 WAS GIVEN TO THE DOCUMENT SOMETIME LATER IN JUNE 1973 AND FORMALLY SUBMITTED BY WEBB AND MORELY TO THE INTERNATIONAL CONGRESS ON RADIATION PROTECTION HELD IN WASHINGTON, D.C., IN SEPTEMBER AS A SCIENTIFIC PAPER OF THE CONGRESS. THE ABSTRACT WAS WRITTEN IN JULY 1973.

5. RE PARA D REF B, THERE ARE NO REPORT NO SIGNIFICANT INCONSISTENCIES BETWEEN NRPB-R.14 REPORT AND NEA HAZARD ASSESSMENT. RE PARA 2D(1) REF B, THE DOSE RATE OF 0.005 REM/Y IN NRPB-R.14 IS CORRECT AND APPEARS IN NEA DOCUMENT AS 0.06 REM/Y DUE TO A TYPING ERROR. BOTH DOCUMENTS SET OUT TO DEFINE THE LIMITING ENVIRONMENTAL CAPACITY AS DEFINED BY THE POLVANI PANEL. THIS CAPACITY IS RELATED ONLY TO ICRP NUMERICAL DOSE LIMITS FOR INDIVIDUALS. THE FURTHER ICRP CONCEPT OF "AS LOW AS REASONABLY ACHIEVABLE..." (ICRP PUB. 22) IS DEALT WITH IN THE CONCEPT OF "STIPULATED CAPACITY" AND IS COVERED IN THE LONDON CONVENTION BY THE PROCEDURE FOR ISSUING SPECIAL PERMITS, WHICH INCLUDE PROVISION FOR RECORD KEEPING (SEE PARA 4.7 OF GOV/1622). RE PARA 2.D(2) REF B, THE LIMITING DISPOSAL RATES QUOTED IN THE CONCLUSIONS OF BOTH THE NEA DOCUMENT AND NRPB-R.14 ARE IDENTICAL. THE DISCUSSION OF SAFETY FACTORS IS marginally DIFFERENT. COMMENT: CATLIN NOTES THAT FORMULA 6 ON PAGE 11 OF NEA REPORT CLEARLY SHOWS THAT CONCENTRATIONS AT BARRIER VARIES INVERSELY WITH DEPTH, AND THAT THERE IS ONLY A FACTOR OF 2.5 BETWEEN 2,000 METERS AND 5,000 METERS, WHICH IS INSIGNIFICANT, IN LIGHT MAGNITUDE OTHER FACTORS.

6. FOREGOING DISCUSSED AT LENGTH WITH NISHIWAKI AND CATLIN OF AGENCY STAFF. ADVISE IF FURTHER INFORMATION AND/OR CLARIFICATION
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